

13.G.02 All connections and nozzles shall be designed to prevent accidental disengagement: all connections shall be equipped with safety lashings. > **See 20.A.16**

13.G.03 Nozzle attachments shall be of metal and fit on the outside of the hose. A deadman type control device shall be provided at the nozzle, to cut off the flow if the operator loses control of hose. A support shall be provided on which the nozzle may be mounted when it is not in use.

13.G.04 Additional requirements on abrasive blasting are in Sections 5 and 6.

#### DEFINITIONS

Abrasive wheel: a cutting tool made of abrasive grains held together by organic (such as resin, rubber, or shellac) or inorganic (such as clay, glass, porcelain, sodium silicate, magnesium oxychloride, or metal) bonds.

Explosive-actuated tool: a tool which uses the expanding gases from a power load to drive a fastener.

Mandrel: a steel shaft and bearings assembly on which a tool, such as an abrasive wheel, is mounted and by which power is transmitted from the machine to the tool.

Spindle: a long tapered pin or rod serving as an axis in spinning.

Tool rest (work rest): a device which prevents the tool or work piece from jamming between the abrasive wheel and the wheel guard.

## SECTION 14

### MATERIAL HANDLING, STORAGE, AND DISPOSAL

#### 14.A MATERIAL HANDLING

14.A.01 Employees shall be trained in and shall use safe lifting techniques.

14.A.02 Requirements for personal protective equipment are covered in Section 5.

14.A.03 Material handling devices shall be available for the material handling needs of an activity.

14.A.04 Whenever heavy or bulky material is to be moved, the material handling needs shall be evaluated in terms of weight, size, distance, and path of movement. The following hierarchy shall be followed in selecting a means for material handling:

- a. elimination of material handling needs by engineering,
- b. movement by mechanical device (e.g., lift truck, overhead crane, or conveyor),
- c. movement by manual means with handling aid (e.g., dollie or cart), or
- d. movement using safe lifting techniques.

14.A.05 Materials will not be moved over or suspended above personnel unless positive precautions have been taken to protect the personnel from falling objects.

14.A.06 Where the movement of materials may be hazardous to persons, taglines or other devices shall be used to control the loads being handled by hoisting equipment: these devices shall be nonconductive when used near energized lines.

## 14.B MATERIAL STORAGE

14.B.01 All material in bags, containers, bundles, or stored in tiers shall be stacked, blocked, interlocked, and limited in height so that it is stable and secured against sliding or collapse.

- a. Material shall be stacked as low as practical and in no case higher than 6 m (20 ft) unless otherwise specified in this Section.
- b. Storage of flammable and combustible materials is covered in Section 9.

14.B.02 Material stored inside buildings under construction shall not be placed within 1.8 m (6 ft) of any hoistway or floor opening, nor within 3 m (10 ft) of an exterior wall which does not extend above the material stored.

14.B.03 Accessways shall be kept clear.

14.B.04 Unauthorized persons shall be prohibited from entering storage areas. All persons shall be in a safe position while materials are being loaded or unloaded from railroad cars, trucks, or barges.

14.B.05 Material shall not be stored on scaffolds or runways in excess of needs for normal placement operations, or in excess of safe load limits.

14.B.06 Noncompatible materials shall be segregated in storage.

14.B.07 Storage of lumber.

- a. Storage of lumber during construction shall be in sections containing a maximum of 1 million board feet with at least 3 m (10 ft) clearance from buildings.
- b. Lumber shall be supported on stable sills and shall be stacked level, stable, and self-supporting.

c. Reusable lumber shall have all nails withdrawn before it is stacked for storage.

d. Lumber piles shall not exceed 6 m (20 ft) in height; lumber to be handled manually shall not be stacked more than 4.8 m (16 ft) high.

14.B.08 Storage of bagged materials.

- a. Bagged materials shall be stacked by stepping back the layers and cross-keying the bags at least every ten bags high.
- b. Bags of cement and lime shall not be stacked more than ten high without setback, except when restrained by walls of appropriate strength.
- c. The bags around the outside of the stack shall be placed with the mouths of the bags facing the center of the stack.
- d. During unstacking, the top of the stack shall be kept nearly level and the necessary setback maintained.

14.B.09 Storage of brick.

- a. Brick shall be stacked on an even, solid surface.
- b. Bricks stacks shall not be more than 2.1 m (7 ft) high; when stacked loose brick reaches a height of 1.2 m (4 ft) it shall be tapered back 5 cm (2 in) in every 0.3 m (1 ft) of height above the 1.2 m (4 ft) level.
- c. Unitized brick (brick securely gathered into large standard packages and fastened with straps) shall not be stacked more than three units high.

14.B.10 Storage of floor, wall, and partition block.

- a. Blocks shall be stacked in tiers on solid, level surfaces.

- b. When masonry blocks are stacked higher than 1.8 m (6 ft), the stack shall be tapered back one-half block per tier above the 1.8 m (6 ft) level.

14.B.11 Storage of reinforcing, sheet, and structural steel.

- a. Reinforcing steel shall be stored in orderly piles away from walkways and roadways.
- b. Structural steel shall be securely piled to prevent members sliding off or the pile toppling over.

14.B.12 Storage of cylindrical material.

- a. Structural steel, poles, pipe, bar stock, and other cylindrical materials, unless racked, shall be stacked and blocked so as to prevent spreading or tilting.
- b. Pipe, unless racked, shall not be stacked higher than 1.5 m (5 ft).
- c. Either a pyramid or battened stack shall be used.
- d. Where a battened stack is used, the outside pile or pole shall be securely chocked: battened stacks shall be tapered back at least one pile or pole in each tier.
- e. Unloading of round material shall be done so that no person is required to be on the unloading side of the carrier after the tie wires have been cut or during the unlocking of the stakes.

**14.C HOUSEKEEPING**

14.C.01 Work areas and means of access shall be maintained safe and orderly.

- a. Sufficient personnel and equipment shall be provided to insure compliance with all housekeeping requirements.

- b. Work areas shall be inspected daily for adequate housekeeping and findings recorded on daily inspection reports.

- c. Work will not be allowed in those areas that do not comply with the requirements of this Section.

14.C.02 All stairways, passageways, gangways, and accessways shall be kept free of materials, supplies, and obstructions at all times.

14.C.03 Loose or light material shall not be stored or left on roofs or floors that are not closed in, unless it is safely secured.

14.C.04 Tools, materials, extension cords, hoses, or debris shall not cause tripping or other hazards.

14.C.05 Tools, materials, and equipment subject to displacement or falling shall be adequately secured.

14.C.06 Empty bags having contained lime, cement, and other dust-producing material shall be removed periodically as specified by the designated authority.

14.C.07 Form and scrap lumber and debris shall be cleared from work areas and accessways in and around building storage yards and other structures.

14.C.08 Protruding nails in scrap boards, planks, and timbers shall be removed, hammered in, or bent over flush with the wood.

14.C.09 Storage and construction sites shall be kept free from the accumulation of combustible materials.

- a. Weeds and grass shall be kept down.
- b. A regular procedure shall be established for the cleanup of the areas as specified by the designated authority.

- c. Rubbish, brush, long grass, or other combustible material shall be kept from areas where flammable and combustible liquids are stored, handled, or processed.

14.C.10 Accumulation of liquids, particularly flammable and combustible liquids, on floors, walls, etc., is prohibited. All spills of flammable and combustible liquids shall be cleaned up immediately.

#### **14.D MATERIAL DISPOSAL**

14.D.01 Waste material and rubbish shall be placed in containers or, if appropriate, in piles.

14.D.02 Waste materials and rubbish shall not be thrown down from a height of more than 1.8 m (6 ft) unless the following are complied with.

- a. The materials or rubbish are dropped through an enclosed chute constructed of wood or equivalent material. Chutes for debris shall be enclosed except for openings equipped with closures at or about floor level for the insertion of materials; the openings shall not exceed 1.2 m (48 in) in height measured along the wall of the chute. Openings shall be kept closed when not in use.
- b. When debris cannot be handled by chutes, the area into which the material is dropped shall be enclosed with barricades not less than 1 m (42 in) in height. Barricades shall be positioned to keep personnel from all debris landing areas; signs warning of the hazard of falling material shall be posted at all debris landing areas and at each level exposed to falling debris.

14.D.03 See Section 9 for burning requirements.

14.D.04 Separate covered, self-closing, nonflammable/-non-reactive containers shall be provided for the collection of

garbage, oily, flammable, and dangerous wastes.

- a. The containers shall be labeled with a description of the contents.
- b. The contents shall be properly disposed of daily.

14.D.05 Hazardous material waste (i.e., vehicle and equipment oils and lubricants, containers and drums for solvents, adhesives, etc.) shall be collected, stored, and disposed of in accordance with Federal, state, and local requirements.